

Patent claims

1. A process for production of foam webs or foam sheets, these webs or sheets being based on a polymer selected from polysulfones, polyetherimides, polyether ketones, and styrene-acrylonitrile copolymer (SAN), acrylonitrile-butadiene-styrene copolymer (ABS), and acrylonitrile-styrene-acrylate copolymer (ASA), via extrusion of a melt which comprises the polymer and a blowing agent, and then foaming of this melt,
- 10 which comprises the additional presence in the melt of from 5 to 50% by weight, based on the polymer, of a filler selected from
- A) a fibrous filler A,
- B) a particulate filler B selected from calcium carbonate, calcium sulfate, magnesium carbonate, barium sulfate, mica, zeolites or silicates,
- 15 and mixtures of these.
2. The process according to claim 1, wherein the styrene-acrylonitrile copolymer has acrylonitrile content of from 20 to 35% by weight.
- 20 3. The process according to claims 1 to 2, wherein glass fibers are used as fibrous filler A.
- 25 4. The process according to claims 1 to 3, wherein the average fiber length of the fibrous filler A is from 0.1 to 10 nm prior to the mixing with the polymer.
5. The process according to claims 1 to 4, wherein the average fiber diameter of the fibrous filler A is from 2 to 40 μm prior to the mixing with the polymer.
- 30 6. The process according to any of claims 1 to 5, wherein the melt comprises from 0.01 to 2% by weight of talc, based on the polymer, as nucleating agent.
- 35 7. The process according to claims 1 to 2 and 6, wherein the average particle diameter of the particulate filler B is from 0.1 to 1000 μm prior to the mixing with the polymer.
- 40 8. The process according to claims 1 to 7, wherein the amount of blowing agent is from 0.1 to 15% by weight, based on the polymer.

9. The process according to claims 1 to 8, wherein a mixture composed of two polymers I and II is used as polymer, where the polymer I comprises no filler, and the polymer II comprises the fibrous filler A or the particulate filler B, or a mixture of these.
- 5 10. The process according to any of claims 1 to 9, wherein water, CO₂, acetone, ethanol or a mixture of these is used as blowing agent.
- 10 11. A foam web or a foam sheet, the web or sheet being obtainable by the process according to claims 1 to 10.
12. A foam web or a foam sheet according to claim 11, whose density, determined to DIN EN 826, is from 15 to 200 g/l.

Patent claims

1. A process for production of foam webs or foam sheets, these webs or sheets being based on a polymer selected from polysulfones, polyetherimides, polyether ketones, and styrene polymers, via extrusion of a melt which comprises the polymer and a blowing agent, and then foaming of this melt,

which comprises a process in which the melt also comprises from 1 to 50% by weight, based on the polymer, of a filler selected from

 - A) a fibrous filler A,
 - B) a particulate, non-graphite filler B,

and mixtures of these.
2. The process according to claim 1, wherein the styrene polymers have been selected from rubber-free polystyrene, impact-resistant polystyrene, styrene-acrylonitrile copolymer (SAN), acrylonitrile-butadiene-styrene copolymer (ABS), and acrylonitrile-styrene-acrylate copolymer (ASA).
3. The process according to claims 1 to 2, wherein glass fibers are used as fibrous filler A.
4. The process according to claims 1 to 3, wherein the average fiber length of the fibrous filler A is from 0.1 to 10 nm prior to the mixing with the polymer.
5. The process according to claims 1 to 4, wherein the average fiber diameter of the fibrous filler A is from 2 to 40 μm prior to the mixing with the polymer.
6. The process according to claims 1 to 2, wherein the particulate filler B has been selected from calcium carbonate, calcium sulfate, and talc.
7. The process according to claims 1 to 2 and 6, wherein the average particle diameter of the particulate filler B is from 0.1 to 1000 μm prior to the mixing with the polymer.
8. The process according to claims 1 to 7, wherein the amount of blowing agent is from 0.1 to 15% by weight, based on the polymer.
9. The process according to claims 1 to 8, wherein a mixture composed of two polymers I and II is used as polymer, where the polymer I comprises no filler, and

the polymer II comprises the fibrous filler A or the particulate filler B, or a mixture of these.

- 5 10. A foam web or a foam sheet, the web or sheet being obtainable by the process according to claims 1 to 9.
11. A foam web or a foam sheet according to claim 10, whose density, determined to DIN EN 826, is from 15 to 200 g/l.